

**VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Blue Ridge Regional Office**  
**INTRA-AGENCY MEMORANDUM**  
**Engineering Analysis**

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<b>Memo To</b>	File
<b>Date</b>	DRAFT
<b>Facility Name</b>	Milams Equipment Sales Inc.
<b>Registration Number</b>	21696
<b>Application No.</b>	1
<b>Date Fee Paid</b>	10/12/21
<b>Amount (\$)</b>	5,669
<b>Distance to SNP (km)</b>	136
<b>Distance to JRF (km)</b>	87
<b>FLM Notification (Y/N)</b>	N
<b>Application Fee Classification (Title V, Synthetic Minor, True Minor)</b>	SM
<b>Permit Writer Signature</b>	draft
<b>Permit Manager Signature</b>	

**I. Introduction**

Milams Equipment Sales Inc. submitted an air permit application signed October 4, 2021, and received October 13, 2021. A permit fee of \$5,669 was received on October 12, 2021. Additional information was received and the application deemed complete on November 8, 2021. The facility was issued a Warning Letter (WL-21-08-BRRO-001) for the construction and operation of a stationary source without a permit. Milams Equipment Sales, Inc. is a heavy equipment restoration business that includes surface coating. The submitted application requests various limitations to obtain a mNSR permit as a synthetic minor source including conditions to limit hazardous air pollutants.

**II. Emission Unit(s) / Process Description(s)**

Milams Equipment Sales, Inc. purchases used heavy equipment to be refurbished and sold. The used equipment is inspected, cleaned, repaired, and painted as needed. The facility consists of five buildings where the surface coatings are applied.

Paint Spray Building #1 (PSB #1) coats the undercarriage of the equipment.  
Paint Spray Building #2 (PSB #2) applies the primary color(s) to the heavy equipment.  
Paint Spray Building #3 (PBS #3) applies the primary color(s) to the heavy equipment.  
Paint Spray Building #4 (PBS #4) applies touchups and detailing to the heavy equipment.  
Paint Spray Building #5 (PBS #5) applies touchups and detailing to the heavy equipment.

The facility was constructed without a permit and the Paint Spray Buildings currently operate in the

following manner:

PSB #1, #4, and #5 are uncontrolled, unvented, and operate as partial enclosures.

PSB #2 and #3 share a homemade air handling system with fabric filters that partially control both buildings, and operate as partial enclosures.

The facility includes three portable kerosene floor heaters rated at 175,000 Btu/hr, each; three portable kerosene floor heaters rated at 210,000 Btu/hr, each; and six used oil heaters rated at 315,000 Btu/hr, each.

### III. Regulatory Review

#### A. 9VAC5 Chapter 80, Part II, Article 6 – Minor New Source Review

The provisions of Article 6<sup>1</sup> apply throughout Virginia to (i) the construction of any new stationary source, (ii) the construction of any project (which includes the affected emissions units), and (iii) the reduction of any stack outlet elevation at any stationary source.

The application is a request to evaluate an existing stationary source that was constructed and operated prior to determining air permit program applicability. The application will be evaluated as a new source. To be exempt from permitting, the regulations provide that a new stationary source must be exempt under both the provisions of 9VAC5-80-1105 B through D as a group and the provisions of 9VAC5-80-1105 E and F.

The facility proposes construction of affected emission units listed in 9VAC5-80-1105 B. The six portable kerosene floor heaters and six used oil heaters are listed at 9VAC5-80-1105 B(1)(a)(2). However, the proposed used oil heaters have a combined maximum rated capacity of 1.89 MMBtu/hr, which requires the used oil space heaters to undergo a state toxic review.<sup>2</sup>

The stationary source has no other affected emission units listed in 9VAC5-80-1105 B; therefore, the exemption determination turns to 9VAC5-80-1105 C for the remainder of the source. The uncontrolled emission rate (UER) for this source is considered the sum of the UERs for each emission unit not exempted under 9VAC5-80-1105 B.

The UER was calculated by summing the worst-case coating for each pollutant as applied by the highest rated spray gun (lb/hr) utilized in each Paint Spray Building. The worst-case coating for each pollutant and spray gun ratings are listed in Attachment A.

As shown in the summary table below, the stationary source's UER for PM, PM10, PM2.5, and VOC exceed the respective permitting threshold; therefore, the stationary source is subject to the permitting requirements of Article 6.

	CUE (TPY)	NUE (TPY)	UER Increase (TPY)	Exemption (TPY)
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<sup>1</sup> Language is paraphrased from 9VAC5-80-1100.

<sup>2</sup> See VADEQ guidance APG 355 – Used Oil Fuel Permitting

PM	0	942.2	942.2	25
PM10	0	942.2	942.2	15
PM2.5	0	942.2	942.2	10
VOC	0	831.2	831.2	25

As described in Section III.E, the affected emissions units (PSB #1 – PSB #5) are in a source category subject to a standard promulgated pursuant to 40 CFR 63 Subpart 6H (MACT 6H). None of the affected emissions units are subject to federal hazardous air pollutant new source review. The six used oil heaters are not affected units of MACT 6H and were evaluated for state toxics. As shown in Attachment A, the six waste oil heaters will not emit any pollutant at a rate greater than the respective exemption rates. Therefore, the stationary source is exempt from the state toxics rule.

B. 9VAC5 Chapter 80, Part II, Article 5 – State Operating Permit (SOP)

The permit application requested limitations on hazardous air pollutant (HAP) emissions to be below major source levels. As requested by the facility, a 9.5 ton/yr limit of any single HAP is included in the SOP. A total HAP limitation of 24.5 ton/yr and recordkeeping requirements of HAP throughput and HAP emissions are included in the SOP. Conditions 8, 15, and 18 are the SOP conditions that limit HAPs.

Public participation requirement to make this SOP federally-enforceable are discussed in Section X.

C. 9VAC5 Chapter 80, Part II, Article 8 and Article 9 – PSD Major New Source Review and Non-Attainment Major New Source Review

Pulaski County is a PSD area for all pollutants as designated in 9VAC5-20-205. The facility is in the 250 TPY major stationary source category.

After issuance of this permit, the facility does not have the potential to emit any regulated NSR pollutant at major stationary source thresholds.

D. 9VAC5 Chapter 50, Part II, Article 5 – NSPS

None applicable.

E. 9VAC5 Chapter 60, Part II, Article 1 – NESHAPS

None applicable.

F. 9VAC5 Chapter 60, Part II, Article 2 – MACT

After issuance of this permit, the facility is an area source of HAPs.

40 CFR 63 Subpart 6H – Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources applies to spray application of coatings as defined in § 63.11180 to motor vehicles and mobile equipment. The facility meets the definition of a spray-applied coating operation. The facility is not. However, § 63.11170(a)(2) provides an exemption to this subpart if the facility demonstrates that coatings applied do not contain any of the target HAPs of this subpart, chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd). A statement certifying that the facility does not spray any coatings with the target HAPs is not included with the application. If the facility intends to spray apply coatings containing the target HAP, the facility must submit the initial notification required by § 63.11175 (to EPA) and comply with the subpart. Currently, VA DEQ does not have delegation of this subpart.

40 CFR 63 Subpart 4M – Surface Coating of Miscellaneous Metal Parts and Products does not apply because the facility is not a major source of HAPs.

40 CFR 63 Subpart 4P – Surface Coating of Miscellaneous Plastics Parts and Products does not apply because the facility is not a major source of HAPs.

40 CFR 63 Subpart 6X – Nine Metal Fabrication and Finishing Source does not apply because the facility does not operate any of the applicable source categories. Currently, VA DEQ does not have delegation of this subpart.

G. State Only Enforceable (SOE) Requirements (9VAC5-80-1120 F)

SOE requirements were not requested and are not required.

H. 9VAC5 Chapter 40, Part II, Existing Sources - Emission Standards

Pulaski County is a not VOC and NO<sub>x</sub> Control Area as designated in 9VAC5-20-206. No applicable Chapter 40 rules were found to contain standards more stringent than the standards within this permit.

**IV. Best Available Control Technology Review (BACT)**

BACT applicability is pollutant-by-pollutant based on the permitting applicability thresholds. Each affected emissions unit emitting a pollutant that is subject to permitting shall apply BACT for that pollutant (9VAC5-50-260 B). BACT is applicable for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC.

PM, PM<sub>10</sub>, and PM<sub>2.5</sub> BACT determinations are identical for each Paint Spray Building. PM/PM<sub>10</sub>/PM<sub>2.5</sub> BACT determination is a limit of 2.15 lb/hr and 5% opacity achieved through an enclosure and venting to fabric filtration with a rated control efficiency of no less than 98%. This BACT determination is supported by previous BACT determinations issued by VA DEQ for surface coating operations subject to Article 6 permitting.

VOC BACT determinations are identical for each Paint Spray Building. VOC BACT determination is a lb/hr emission limit for each Paint Spray Building achieved through proper operation and maintenance of equipment and a VOC content throughput limit for each Paint Spray Building. The

nature of Milam's business is unpredictable and requires a wide variety of coatings on different types of equipment. For that reason, the BACT determination for this surface coating operation is a short-term emission limit (lb/hr) coupled with a VOC content throughput limit and VOC calculations that assume 100% of VOC content is emitted.

## **V. Summary of Potential Emissions Increase**

The facility's change in PTE is shown in the table below.

Pollutant	Past PTE (TPY)	Future PTE (TPY)	PTE Change (TPY)
PM	0	9.42	9.42
PM10	0	9.42	9.42
PM2.5	0	9.42	9.42
VOC	0	36.5	36.5

## **VI. Dispersion Modeling**

### **A. Criteria Pollutants**

As shown in the table in Section V, the project does not cause an increase in PTE greater than the respective value of "significant" in 9VAC 5-80-1110C. Therefore, modeling is not required.

### **B. Toxic Pollutants**

Modeling is not required for a project that is exempt from the state toxics rule.

## **VII. Boilerplates and Boilerplate Deviations**

This permit is based on the Skeleton & Generic mNSR boilerplates and Misc. Coatings boilerplate.

## **VIII. Compliance Demonstration**

The facility is required to observe the monitoring devices of the fabric filters, maintain filter manufacturer guarantee of control efficiency, and keep VOC throughput records to demonstrate compliance.

As explained in the BACT section of this engineering analysis and as shown in the permit, the five spray building will be required to be enclosed, particulate emissions vented to filters with differential pressure gauges. The application states that the doors to the paint spray buildings are open at different times for air circulation and to reduce ambient heat. Upon issuance of this permit the doors will only be allowed to be open when no paint spraying is being performed or if the building is under negative pressure and no particulate is being emitted from the openings.

## **IX. Title V Review – 9VAC5 Chapter 80 Part II Article 1 or Article 3**

After issuance of this permit, the facility does not have a PTE for any pollutant greater than the respective Title V major source threshold. The facility is not in a category required to obtain a Title V permit regardless of emission rate. Title V permitting does not apply.

## **X. Public Participation**

The SOP limitations (Conditions 8, 15, and 18) will be required to go through a 30-day public notice period in order to be federally enforceable, per 9VAC5-80-1020A. The public notice was advertised in the *Roanoke Times* on April 14, 2022. The public comment period ran from April 14, 2022 to May 16, 2022.

## **XI. Other Considerations**

The VOC emission limits (lb/hr and tpy) for each Paint Spray Building are the limits requested by the application.

The application applied emission factors from AP-42 Ch. 1.11 for waste oil combustion. However, an updated emission factor for lead was taken from the Vermont Used Oil Analysis and Waste Oil Furnace Emissions Study<sup>3</sup> and applied to the emission calculations. The requested waste oil throughput was not implemented because the waste oil heaters were found to be exempt from permitting as shown by Attachment A.

## **XII. Recommendations**

Approval of the draft permit is recommended.

### **Attachments**

Attachment A – Emission Calculations

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<sup>3</sup> Vermont Used Oil Analysis and Waste Oil Furnace Emissions Study, VT Agency of Natural Resources and EPA, September 1994, revised March 1996.